

Wind

Convecting air masses in the troposphere create air currents known as winds, due to horizontal differences in air pressure. Winds flow from a region of higher pressure to one of a lower pressure. Global air movement begins in the equatorial region because it receives more solar radiation. The general flow of air from the equator to the poles and back is disrupted, though, by the rotation of the earth. The earth's surface travels faster beneath the atmosphere at the equator and slower at the poles. This causes air masses moving to the north to be deflected to the right, and air masses moving south to be deflected to the left. This is known as the "Coriolis Effect." The result is the creation of six huge convection cells situated at different latitudes. Belts of prevailing surface winds form and distribute air and moisture over the earth.

Jet streams are extremely strong bands of winds that form in or near the tropopause due to large air pressure differentials. Wind speeds can reach as high as 200 kilometers per hour. In North America, there are two main jet streams: the polar jet stream, which occurs between the westerlies and the polar easterlies, and the subtropical jet stream, which occurs between the trade winds and the westerlies.

